

ABSTRACT OF THE DISCLOSURE

A method and system for extending a plurality of sub-interfaces of a router port of a wide area network access device to a plurality of user networks using a transport network is provided.

The transport network comprises a plurality of network nodes coupled together by one or more

5 data communication paths wherein at least one of the network nodes comprises an access device.

The access device includes a plurality of router port extension functional units wherein each

router port extension functional unit is coupled to one of the user networks. Each router port

extension functional unit comprises a virtual channel agent and a LAN agent. Each router port

extension functional units has an associated virtual port, and all of the virtual ports are

10 multiplexed to a single LAN communication port. The method comprises the steps of receiving

a first upstream data packet from a first user LAN, decapsulating the received first data packet so

that the LAN encapsulation format is removed from said received first data packet, encapsulating

the first decapsulated data packet into the transport network encapsulation format, transmitting

the first transport network encapsulated data packet onto the transport network, and repeating the

15 foregoing steps with a second user LAN using a second router port extension functional unit.